



## **Skill of Real-Time APCC's Seasonal Multi-Model Ensemble Predictions during the Period 2008-2014**

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The Asia-Pacific Economic Cooperation (APEC) Climate Center (APCC) has regularly disseminated monthly three-month mean multi-model ensemble (MME) forecasts in both deterministic and probabilistic forms since November, 2007. This paper examines the performance of the APCC operational real-time MME seasonal forecasts for the period 2008-14. During the 7-year periods, the APCC forecast skills depend on season and region, and their levels are higher in the tropics and boreal winter than extratropics and boreal summer due to direct effects as well as remote teleconnections from boundary forcings (e.g., SST, ENSO), with the skill levels for temperature being generally higher, and less seasonally and regionally dependent, than those for precipitation. However, the APCC operational probabilistic forecasts during this period show a strong cold bias (i.e. underforecasting of above-normal temperatures), suggesting that the real-time forecast skill for temperature is relatively lower than the long-term climatological skill (i.e. hindcast skill). Similar wet bias is also evident for precipitation. The overall forecast skills for the period 2012-14 are relatively lower than those for other real-time periods and even the long-term hindcast period. The 3-year lower skill period is characterized by transition and/or continuous ENSO-neutral phases following the decaying phase of the weak La Nina in 2011/12DJF.